

GENERAL CIVIL REQUIREMENTS

Structures

Local codes and requirements - Standard Florida Building Code (Wind Speed = 150 Mile per Hour).

Electrical

Final design also will be performed in coordination and communication with Florida Power & Light Company (FPL). Electrical service will be extended from the existing electrical distribution system that currently serves nearby systems. The electrical power needs will be estimated to include motor horsepower (HP), motor operated valves, lighting, and instrumentation controls. Emergency power will be provided by a back-up generators located either at the treatment plants (for reclaimed water projects) or on-site for surface water projects). Each well will have a control panel. All electrical equipment will have nameplates to identify each item with its respective service or function. The nameplates will include the name of the equipment being served and its associated component number.

The Following are the electrical standards and codes that will be used to design and construct the proposed facilities:

- National Electrical Code (NEC)
- American National Standards Institute (ANSI)
- National Electrical Manufacturers Association (NEMA)
- Institute of Electrical and Electronic Engineers (IEEE)
- Insulated Cable Engineers Association (ICEA)
- Occupational Safety and Health Administration (OSHA)
- American Society for Testing Material (ASTM)
- Underwriters' Laboratories, Inc. (UL)
- Local codes and standards

TECHNICAL SPECIFICATIONS

Division 1 – General Requirements

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|-------|---------------------------|
| 01025 | MEASUREMENT AND PAYMENT |
| 01040 | CONSTRUCTION COORDINATION |
| 01065 | PERMITS AND FEES |
| 01070 | GENERAL ABBREVIATIONS |
| 01200 | PROJECT MEETINGS |
| 01300 | SUBMITTALS |
| 01326 | SCHEDULE (CPM) |

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| 01370 | SCHEDULE OF VALUES |
| 01380 | CONSTRUCTION PHOTOGRAPHS |
| 01410 | TESTING LABORATORY SERVICES |
| 01500 | CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS |
| 01600 | MATERIAL AND EQUIPMENT |
| 01667 | SYSTEM START UP AND TESTING |
| 01700 | CONTRACT CLOSEOUT |
| 01730 | OPERATION AND MAINTENANCE MANUALS |

Division 2 – Site Work

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|-------|--|
| 02210 | SAND CEMENT RIP-RAP |
| 02221 | EXCAVATING, BACKFILLING AND COMPACTION |
| 02232 | LIME ROCK BASE |
| 02270 | EROSION AND SEDIMENT CONTROL |
| 02486 | FINISH GRADING AND GRASS |
| 02822 | CHAIN LINK FENCE AND GATES |

Division 3 - Concrete

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|-------|---|
| 03100 | CONCRETE FORMWORK |
| 03201 | CONCRETE REINFORCEMENT |
| 03260 | CONCRETE JOINTS AND WATERSTOPS |
| 03300 | CONCRETE |
| 03345 | CONCRETE FINISHING AND CURING |
| 03800 | LEAKAGE TESTING OF HYDRAULIC STRUCTURES |

Division 5 - Metals

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|-------|---|
| 05050 | BOLTS, WASHERS, DRILLED ANCHORS, AND EYEBOLTS |
| 05121 | MISCELLANEOUS STRUCTURAL STEEL AND ALUMINUM |
| 05515 | LADDERS, STAIRS, AND STAIR NOSINGS |
| 05520 | HANDRAILS AND SAFETY CHAINS |
| 05530 | GRATING, COVER PLATES, AND ACCESS HATCHES |

Division 9 - Finishes

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|-------|----------------------|
| 09900 | PAINTING AND COATING |
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Division 11 - Equipment

- 11210 HORIZONTAL END SUCTION CENTRIFUGAL PUMPS
- 11214 VERTICAL TURBINE PUMPS
- 11215 VERTICAL TURBINE PUMPS-WATER WELLS
- 11240 CO₂ FEED SYSTEM
- 11281 FABRICATED STAINLESS-STEEL SLIDE GATES
- 11375 ULTRAVIOLET DISINFECTION SYSTEM

Division 13 – Special Construction

- 13226 UNDERDRAIN AND COLLECTION SYSTEM

Division 15 – Mechanical

- 15000 PIPING SCHEDULE & GENERAL PIPING REQUIREMENTS
- 15041 DISINFECTION OF PIPING AND STRUCTURES
- 15044 PRESSURE TESTING OF PIPING
- 15056 DUCTILE-IRON PIPE
- 15064 PVC DISTRIBUTION PIPE (AWWA C900)
- 15100 MANUAL, CHECK, AND PROCESS VALVES
- 15108 AIR-RELEASE AND VACUUM-RELIEF VALVES
- 15121 MISCELLANEOUS PIPE FITTINGS AND ACCESSORIES
- 15122 FLEXIBLE PIPE COUPLINGS AND EXPANSION JOINTS
- 15132 PRESSURE GAUGES
- 15142 WALL PIPES, SEEP RINGS, AND PENETRATIONS
- 15155 MAGNETIC FLOWMETER
- 15190 EQUIPMENT, PIPING, DUCT & VALVE IDENTIFICATION

Division 16 - Electrical

- 16015 ELECTRICAL REFERENCE SYMBOLS
- 16020 WORK INCLUDED
- 16025 CODES, FEES, & STANDARDS
- 16035 ACCEPTANCE TESTING
- 16040 IDENTIFICATION
- 16050 SPECIAL REQUIREMENTS
- 16110 RACEWAYS AND CONDUITS

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| 16120 | WIRES AND CABLES |
| 16130 | OUTLET BOXES |
| 16134 | PANEL BOARDS |
| 16140 | WIRING DEVICES |
| 16150 | ELECTRIC MOTORS |
| 16160 | MOTOR CONTROLS |
| 16170 | DISCONNECTS |
| 16180 | OVERCURRENT PROTECTIVE DEVICES |
| 16190 | SUPPORTING DEVICES |
| 16410 | ELECTRIC SERVICE |
| 16450 | GROUNDING |
| 16460 | TRANSFORMERS |
| 16501 | LIGHTING FIXTURES |
| 16709 | SURGE SUPPRESSION EQUIPMENT |
| 16850 | INSTRUMENTATION, CONTROL AND TELEMETRY SYSTEM |
| 16910 | CONTROL PANELS |

Reference:

1. Pumping station Design Robert Sanks, Second Edition, 1998.
2. Wastewater Technology Fact Sheet Ultraviolet Disinfection, EPA September 1999.
3. Water Ten State Standards